

Eat Smart Be Smart

Food Math

 **Grade Level:** Fourth **Lesson Time:** 50 Minutes

 **Integrated Core Subjects:** Math and Health Enhancement

 **Montana Content Standard:** Math 1: Students engage in the mathematical processes of problem solving and reasoning, estimation, communication, connections and applications, and using appropriate technology. Math 2: Students demonstrate understanding of and an ability to use numbers and operations.

 **Montana Content Standard:** Health Enhancement 1: Students have a basic knowledge and understanding of concepts that promote comprehensive health. Health Enhancement 5: Students demonstrate the ability to use critical thinking and decision making to enhance health.

 **Objectives:** Students will identify the recommended servings for each food group per day for children their age; recognize and select recommended serving sizes for foods within a food group; plan a day's worth of menus to meet the recommended number of servings for each food group for fourth grade students.

Lesson/Activity

1. This lesson will build on the MyPlate for Montana Kids lesson and reinforce the concept that children need to eat more from some food groups and less from others. It will also explore what constitutes a serving for foods within a food group.
2. Briefly explain the difference between a portion size and a serving size to the students. For an easy method to cover this concept, review the teacher reference handout, Portion Size Versus Serving Size. A portion is the amount of food a person chooses to eat while a serving is a standard amount that is used to give advice about how much to eat or identify how many calories or nutrients are in a food. Provide some examples of foods to emphasize the difference between the two.
3. Explain that there are recommended amounts of each food group we need to eat each day to stay healthy, grow, and have energy for school and activities. As fourth graders, students need at least the following number of servings from each food group per day: grains - 6 servings; vegetables - 2 1/2 cups; fruits—1 1/2 cups; milk—3 cups; meats/beans—5 servings; and, oils - 5 teaspoons.
4. Review the units of measure that indicate what a serving is for many of the food groups, 1 cup and 1/2 cup measures. Show two examples of 1 cup measure with the 1 cup milk carton and examples of the 1/2 cup measure and 1/2 cup juice. Use the Serving Size are in Your Hand and How Much Do You Eat handouts to review serving sizes of common foods.
5. Distribute the Food Math work sheet and review specific food items and their serving size. Divide the students into pairs and distribute the Food Math work sheet. Explain that they are going to help plan a days' worth of meals and one snack for Jason, a 9-year-old boy. They need to create a menu for breakfast, lunch, dinner and one snack. The menu they create must include the right amount of food from all the food groups.
 - Draw kids' attention to the total amount of servings for each food group at the top of the page: 6 ounces grain, 2 1/2 cups vegetable, 1 1/2 cups fruit, 3 cups milk, 5 ounces meat and beans).

Materials Needed

- A copy of the Food Math work sheet for each pair of students.
- A few sets of common measuring cups: 1 cup and 1/2 cup measure; 1 cup milk carton; 1/2 cup juice cup or can.
- Teacher reference material: Is it a Portion or a Serving, Serving Sizes are in Your Hand, and How Much Do You Eat handouts.

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- Ask the following questions for each group of food:
 - ◊ Grains: If you choose a hamburger bun how many ounces will that equal, and how many total ounces does Jason need per day? (Answers: 2 ounces; 6 ounces/day)
 - ◊ Vegetables: How many cups does Jason need per day and how many spears of broccoli count as a cup? (Answers: 2 1/2 cups;/day; 3 spears)
 - ◊ Fruits: How many cups of fruits does Jason need per day and if you choose a small box of raisins how many cups does that count for? (Answers: 1 1/2 cups per day; 1/2 cup)
 - ◊ Milk: How many cups does Jason need per day? How much is a carton of milk from the lunch room? (Answers: 3 cups per day; 1 cup)
 - ◊ *Meat and Beans: How much peanut butter counts as 1 ounce and how many total ounces are needed per day? (Answers: 1 Tablespoon peanut butter equals one ounce equivalent; 5 ounces per day)
 - Instruct the students to plan one meal at a time and to brainstorm foods for each meal by discussing the foods they like to eat and the foods listed on the work sheet. Have them write the foods out and list the serving size by each one. As they select the foods, have them write a "B" for breakfast, "L" for lunch, "D" for dinner, and "S" for snack on the line next to the food choice. Remind them that foods can be used more than once, but encourage them to use most of the foods and to check the color of their menus to see if they will be appealing by appearance.
 - After they have planned their menu, ask them to check to see if the number of servings for each food group meets the daily total servings for all of the food groups.
6. Have each pair share one meal or snack selection with the class. Ask the students if the meals they planned for Jason are similar to what they might eat today? What is different or missing? Answer: Fast food meals and combination foods like spaghetti and meatballs or pizza. Some combination foods like pizza can fit into several food groups (crust-grain, sauce-vegetable, cheese-milk, ham-meat, pineapple-fruit). Fast foods can also fit into several food groups but be aware these foods can be high in fat.
7. Conclude the lesson by pointing out the importance of selecting a variety of foods (3-5 food groups/meal; 2 food groups/ snack) and of being aware of what the serving size is for the food groups to meet their energy and nutrient needs for growth and to stay healthy.



Outcome Goals

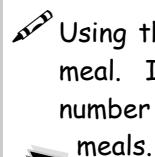


Students will understand the difference between a portion size and a serving size.



Students will plan a menu for one day to meet the total number of servings from each food group that a child their age needs to be healthy.

Extending the Lesson



Using the school lunch menu, calculate the number of servings a student gets from each food group in one meal. If the school also serves breakfast, calculate the number of servings from each meal and total the number of servings for each food group for both meals.

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Acknowledgments/Adapted From

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